P96/780

Popular Publications

of the U.S. Geological Survey

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Popular Publications

of the U.S. Geological Survey

Concern for the environment has deepened in recent years, and Americans have become increasingly interested in learning about the Earth and the problems posed by its complex nature. The U.S. Geological Survey has engaged in a "popular" publications program to inform the public about geology, hydrology, topographic mapping, and related earth sciences. Review copies or limited quantities of those publications *not* marked by an asterisk (*) may be obtained free by visit to any of the Survey's Public Inquiries Offices or by visit to, or by mail from, any Distribution Center listed on the back pages of this publication.

Because of increasing demands for bulk quantities of these publications by the public and by members of the educational and scientific communities, those publications marked with an asterisk(*) may be purchased from:

Superintendent of Documents
U.S. Government Printing Office
Washington, D C 20402

Information as to price, discount, and other conditions governed by the Superintendent of Documents may be obtained by writing to the above address.

This catalog contains an annotated list of all presently available titles of Popular Publications. As additional nontechnical materials about the earth sciences and related subjects are prepared, they will be listed in subsequent editions of this publication.

About the Survey

The United States Geological Survey (28p.)*
Describes the organization, functions, and activities of the U.S. Geological Survey (USGS) carried on at its National Center in Reston, Va., and at regional offices across the Nation.

The U.S. Geological Survey's National Center, Reston, Virginia (36p.)*
Describes the Survey's National Center in Reston, Va. Discusses architectural details, space utilization, and special features of the facility.

Access Routes to the U.S. Geological Survey's National Center, Reston, Virginia (10p.)
Briefly describes Reston, Va., the site of the Geological Survey's National Center and relates the Center's location to Metropolitan Washington, D.C. Provides maps indicating access routes to the Center.

The U.S. Geological Survey's Central Region Headquarters, Denver, Colorado (28p.)
Describes activities and services performed by the U.S. Geological Survey at its Central Region Headquarters in Denver, Colo.

The U.S. Geological Survey's Western Region Headquarters, Menlo Park, California (20p.)
Describes activities and services performed by the U.S. Geological Survey at its Western Region Headquarters in Menlo Park, Calif.

The U.S. Geological Survey's EROS Data Center, Sioux Falls, South Dakota (40p.)*

Discusses the Earth Resources Observation Systems (EROS) Program and describes the functions of the EROS Data Center at Sioux Falls, S. Dak. Explains how data obtained from satellites and aircraft are received, interpreted, and made available to the public.

Introduction to the U.S. Geological Survey's EROS Data Center, Sioux Falls, South Dakota (12p.)

Introduces and briefly describes the products and services of the EROS Data Center to potential users. Provides map indicating access routes to the Center.

The U.S. Geological Survey's Library (8p.)

Describes the Survey's collection, comprising one of the world's largest earth science libraries. Lists services offered to the scientific community and to the public.

The U.S. Geological Survey's Photographic Library (8p.)

Lists services available at the Survey's photographic library in Denver, Colo. Explains how to obtain prints, slides, negatives, and other photographic material.

The U.S. Geological Survey's Public Inquiries Offices: Focal Points for Information (10p.)*

Lists nationwide locations of offices that distribute maps, publications, and other materials produced by the Geological Survey.

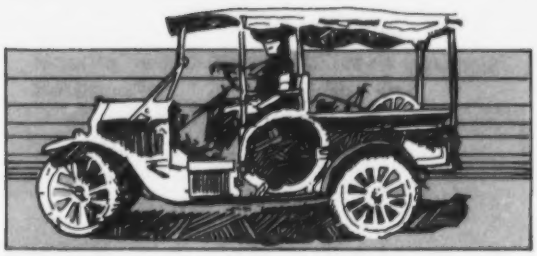
The U.S. Geological Survey's Land Information and Analysis Office (10p.)*

Describes the organization and functions of the above Office, which serves as a bridge between those who compile earth-science data, and those who use the data.

Sources of Information, Products, and Services of the U.S. Geological Survey (24p.)
Briefly describes the services provided by the Geological Survey. Lists bureau sources and instructions for borrowing, purchasing, or obtaining publications, motion picture films, photographs, maps, space images, and other materials.

Motion Picture Film Services of the U.S. Geological Survey (20p.)
Provides an annotated list of motion picture films on earth-science subjects available on a short-term, free-loan basis. Also provides instructions for borrowing or purchasing films.

Films are cleaned and inspected before shipping.



Historical Notes

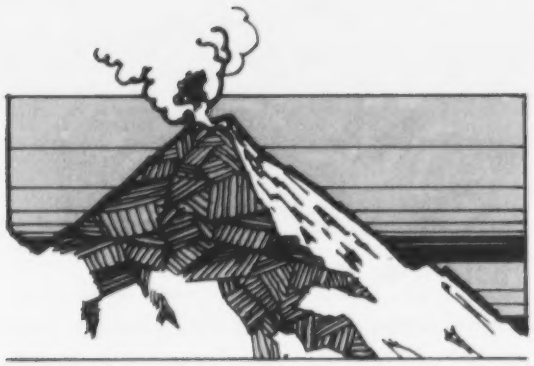
A Brief History of the U.S. Geological Survey (52p.)*
Presents a short history of the Survey from its founding in 1879 to the present. Describes the growth and activities of the agency through the years.

Images of the U.S. Geological Survey, 1879-1979 (60p.)
Traces the history of the U.S. Geological Survey through use of photographs appropriate to the times. Consists of a brief explanatory text describing the history of the Survey and running captions that explain the "Images."

John Wesley Powell: Soldier-Explorer-Scientist (28p.)*
Reviews the life of John Wesley Powell (1834-1902): Civil War veteran, pioneer explorer of the Green and Colorado Rivers, eminent scientist in the fields of geology and ethnology, and second Director of the U.S. Geological Survey.

John Wesley Powell's Exploration of the Colorado River (32p.)*
Describes Powell's historic pioneer voyage through the canyons of the Colorado River, starting at Green River Station, Wyo., and ending at the junction of the Colorado and Virgin Rivers in Arizona.

Ferdinand Vandiveer Hayden and the Founding of Yellowstone National Park (48p.)*
Depicts the role geologist F. V. Hayden played in the exploration and founding of Yellowstone National Park. Contains a selection of historic photographs by noted western photographer W. H. Jackson.



Geology

Geologic Time (24p.)*
Explains the relative and atomic time scales and how geologists measure the age of the Earth. Illustrates, with charts and diagrams, the scientific processes that are used to interpret the Earth's geologic history.

Our Changing Continent (16p.)*
Discusses the evidence and techniques scientists use to reconstruct the history of the changing land surface of the North American Continent.

Landforms of the United States (20p.)*
Discusses the sculpturing of landforms and the effects of wind, water, and chemical processes. Lists major physiographic divisions of the United States and describes their characteristic features.

Geology of Caves (20p.)*
Describes various types of caves, how they are formed, their features, the minerals they contain, and how they may be used. Provides cautionary comments on cave exploration.

Geologic History of Cape Cod, Massachusetts (24p.)*
Interprets the glacial history of Cape Cod and explains the origin of many of the unique surface features of the peninsula. Discusses the Cape's future growth and use.

Mountains and Plains: Denver's Geologic Setting (24p.)*
Describes the nature and structure of the rocks that underlie Denver, Colo., and part of the adjacent Front Range. Provides a road log to explain the natural features of the area.

The Geologic Setting of the John Day Country, Grant County, Oregon (24p.)*
Describes the natural processes that formed the land surface of one of the Pacific Northwest's most notable recreation areas. Uses a road log to pinpoint interesting features.

The Channeled Scablands of Eastern Washington: The Geologic Story of the Spokane Flood (28p.)*
Summarizes geologic events that formed the deeply scarred region known as the Scablands. Tells how the Scablands area was formed as a result of the great "Spokane Flood."

Natural Hazards on the Island of Hawaii (16p.)*
Uses a question and answer format to provide information about the hazards posed by Hawaii's volcanoes, earthquakes, and tsunamis (seismic sea waves).

Engineering Geology (16p.)*
Presents a discussion of how geologic settings affect the location, design, and construction of engineering projects. Explains how geologic principles are used to avoid or minimize land and property damage.

Marine Geology: Research Beneath the Sea (16p.)*
Discusses the nature of the ocean floor and the character of bottom sediments and underlying rocks. Describes geologic processes acting on the ocean floor environment.

The Interior of the Earth (8p.)*
Explains the structure and nature of the Earth's crust, mantle, and core. Describes the procedures used to obtain this information through studies of seismic wave patterns.

Volcanoes (10p.)*
Describes the nature of volcanoes and the various volcanic processes. Highlights world-famous volcanoes according to dominant features and characteristics.

Volcanoes of the United States (20p.)*
Describes historic and recent volcanic activity, and discusses the spectacular eruptions and related phenomena of volcanoes in the United States. Notes unstable areas that have recurrent volcanic activity.

Man Against Volcano: The Eruption on Heimaey, Vestmann Islands, Iceland (20p.)*
Discusses the spectacular volcanic eruption on Heimaey that almost buried the fishing port of Vestmannaeyjar. Explains how volunteer crews "fought" and defeated the lava flow.

Earthquakes (20p.)*
Explains the nature and causes of earthquakes. Describes the techniques used to detect, record, and measure seismic disturbances. Provides historical data on several world-famous earthquakes.

The Severity of an Earthquake (16p.)*
Defines "intensity" and "magnitude" and attempts to clarify the meaning of severity when referring to earthquakes. Explains the Richter Magnitude Scale and the Modified Mercalli Intensity Scale.

Safety and Survival in an Earthquake (12p.)*
Describes the hazards posed by earthquakes and offers instructions for individual action before, during, and after a tremor to minimize loss of life and damage to property. Also available in Spanish.

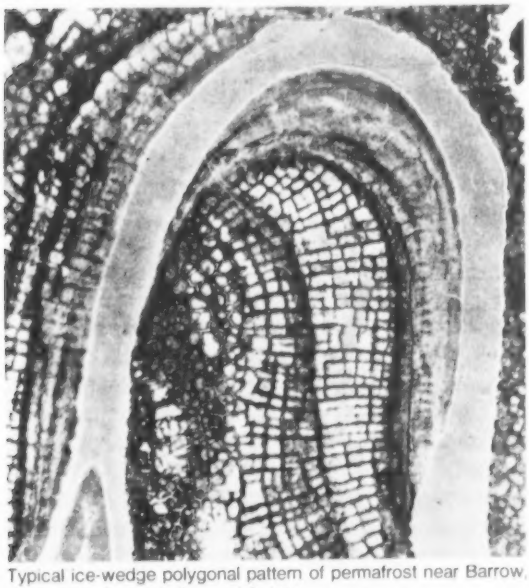
The San Andreas Fault (12p.)*
Describes the nature, behavior, and earthquake history of this famed fault system that extends from northern California to the Gulf of California.

Active Faults of California (16p.)*
Discusses the earthquake-prone areas along the San Andreas and other fault systems of California. Lists historical earthquakes and their locations and surface effects.

The Antarctic and Its Geology (16p.)*
Describes the geologic history and physical characteristics of Antarctica. Discusses Geological Survey research activities on the frozen continent.

The Great Ice Age (16p.)*
Reviews the history of glacial advances and retreats during the Pleistocene Epoch. Also describes the effects of glaciers on various parts of the Earth's surface.

Permafrost (16p.)*
Defines permafrost and summarizes its geographic distribution. Explains how construction activities alter local permafrost conditions and discusses how best to counteract unfavorable changes.



Typical ice-wedge polygonal pattern of permafrost near Barrow, Alaska, is shown in this aerial view.

Energy and Minerals

Nuclear Energy Resources: A Geologic Perspective (16p.)*
Discusses nuclear energy fuels and provides a short history of the production of such fuels. Also discusses the occurrence of uranium and thorium in nature.

Geysers (24p.)*
Explains the nature of geysers and conditions that lead to repeated eruptions. Discusses differences among geysers, their underground "plumbing systems," and the various phases of the geyser life cycles.

Natural Steam for Power (12p.)*
Describes the investigation of geothermal steam as a potential source of energy for worldwide power needs. Specifically discusses the nature and behavior of steam formed underground.

The Use and Conservation of Minerals (8p.)*
Discusses the expanding demand for, and the dwindling supplies of, the Nation's mineral resources. Emphasizes the need for conservation practices.

Oil Shale: A Potential Source of Energy (16p.)*
Describes the nature of oil shale and its distribution in the United States. Includes a description of shale oil as a potential source of oil, solid fuel, and gas.

Oil Shale: Life Above the Shale (8p.)*
Describes the ecological study of plants and animals living in the areas under lease for oil shale development. Briefly tells how the data allow scientists to compare the pre- and post-development differences.

Oil Shale: Air Quality and Meteorology (10p.)
Discusses the manner in which data on air quality and meteorology are collected prior to oil shale development. Touches on how data taken before and data taken after development are compared.

Collecting Rocks (12p.)*
Describes the origin of major rock types and how rocks can provide clues to the Earth's history. Includes suggestions for starting a rock collection, identifying specimens, and housing such a collection.

Lithium: Nature's Lightest Metal (16p.)*
Describes the physical and chemical properties of lithium, the world's lightest known metal. Provides information on the discovery of lithium, its occurrence in nature, and both conventional and potential uses.

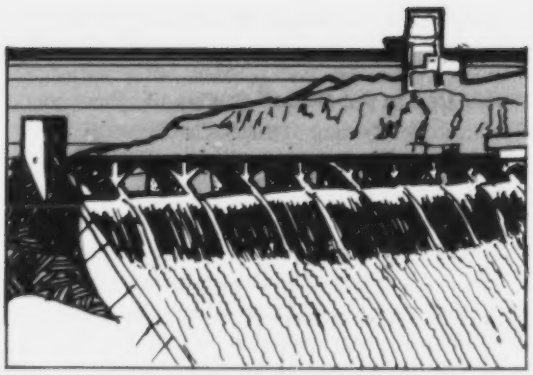
Gold (24p.)*
Discusses the nature of gold, its origins, and the geologic environments in which it is commonly found. Provides information about the uses of gold and a brief historical account of production in the United States.

Prospecting for Gold in the United States (20p.)*
Describes various kinds of gold deposits and their locations. Offers a brief review of the problems faced by present-day prospectors and lists available maps and services.

Suggestions for Prospecting (28p.)*
Compares modern prospecting techniques with those of former years. Give suggestions for prospecting and provides information on mineral claims, Government services, and reference material.

Inspection of Petroleum Operations on the Outer Continental Shelf (16p.)*
Describes the daily activities of a USGS inspector in monitoring oil well operations on the Outer Continental Shelf (OCS). Briefly explains some of the laws and regulations that govern such operations.

An oil rig located on the Outer Continental Shelf.



Water Resources

Ground Water (24p.)*
Describes the occurrence and movement of ground water beneath the earth's surface as the largest single source of fresh water available to man.

Save Water.....Save Money (10p.)*
Describes how much water is used by consumers and how much it costs. Points out major sources of water waste. Suggests methods of saving water—and money.

The Hydrologic Cycle (8p.)*
Explains the natural process by which water is circulated from the seas to the atmosphere, to the land, and back to the seas in an endless cycle.

What Is Water? (8p.)*
Describes water in terms of its basic chemical properties and diverse physical characteristics. Briefly tells of the formation of water on Earth.

Why Is the Ocean Salty? (16p.)*
Discusses the origin of the oceans, possible causes of their salty nature, and the reasons for variations in salinity found in the world's oceans.

The Water of the World (20p.)*
Discusses the amount of water contained in the world's atmosphere, on the surface, and

underground. Describes the world's "water balance."

Water Use in the United States (8p.)*
Summarizes the use of the Nation's water supply for domestic, industrial, rural, and irrigational purposes.

Water Dowsing (16p.)*
Provides a brief history of water dowsing. Explains how hydrologists of the U.S. Geological Survey and other agencies use scientific methods to locate ground water.

The Water in the Great Smoky Mountains National Park (16p.)*
Discusses the part that water plays in making the Great Smoky Mountains a vacation and resort area. Includes brief historical notes.

Water in the Urban Environment: Erosion and Sediment (12p.)*
Explores the dual role that water plays as both a resource and a hazard. Discusses erosion and sediment and possible actions that minimize these processes.

Water in the Urban Environment: Real-Estate Lakes (20p.)*
Describes characteristics of "real-estate" lakes, pinpointing potential problems. Suggests management guidelines to minimize adverse impacts.

Water and Industry in the United States (20p.)*
Focuses on how water is used by industry. Explains the complexity of the supply and demand for water resources and specific industrial problems related to the environment.

Planning for Water Quality Management (20p.)*
Describes information, services, and products available to water quality management planners through the Survey's Water Resources Division District Offices in the various States.

The Northeast Water Supply Crisis of the 1960's (16p.)*
Documents the water supply crisis of the northeastern region during the early and mid-1960's. Explains how the crisis drew attention to water-supply problems.

Rain: A Water Resource (8p.)*
Provides information on the annual precipitation in areas of the United States. Explains how to express rainfall as quantities of water.

Glaciers: A Water Resource (24p.)*
Discusses the relationship between glacial ice and the amount of water on land surfaces. Describes the types of glaciers, their origins, and the natural processes that regulate the melting of ice.

The Great Salt Lake (20p.)
Discusses the Great Salt Lake in Utah including its early history, its physical characteristics, its flora and fauna, and the industry and urbanization along its shores.

The Breakout of Alaska's Lake George (16p.)*
Describes and explains the spectacular summer breakout of Alaska's ice-dammed Lake George. Includes a table detailing past breakouts.

Part of the ice remains in Lake George after the breakout.

River Basins of the United States: A Series (8p. each)*
Lists basic facts including historical notes, flow characteristics, and physical statistics on selected river basins of the United States. Discusses the Colorado, the Columbia, the Delaware, the Hudson, the Potomac, and the Wabash Basins.

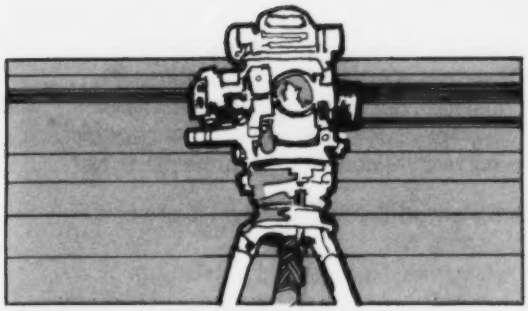
The Amazon: Measuring a Mighty River (20p.)*
Recounts hydrologic investigations, conducted jointly by the U.S. Geological Survey and the Brazilian Government. Presents facts about the Amazon's flow, physical characteristics, and chemical composition.

U.S. Geological Survey Publications on Floods (28p.)*
Lists reports prepared by the Geological Survey on major floods of the United States. Provides sources of information on floods for reference purposes.

NASQAN: Measuring the Quality of America's Streams (8p.)*
Describes NASQAN (National Stream Quality Accounting Network), a system that provides data necessary to account for the quantity and quality of water moving within, and from, the United States.

NAWDEX: A Key to Finding Water Data (16p.)
Describes NAWDEX (NAtional Water Data EXchange), a national confederation of organizations active in water-resource fields. Explains how NAWDEX makes water data readily available to user activities as its primary objective.

WATSTØRE: A National Water Data Storage and Retrieval System (16p.)
Describes WATSTØRE (WATer Data STOrage and REtrieval), a computer-based system that stores hydrologic data collected by the Survey in its investigations of the Nation's surface and ground water.



Maps and Mapping

Topographic Maps (28p.)*
Describes the nature of a topographic map, the phases of its preparation, and its diverse uses. Explains map symbols and includes full color map examples.

Topographic Maps: Silent Guides for Outdoorsmen (10p.)*
Describes the use of topographic maps in a variety of outdoor and recreational activities. Discusses the application of varied map scales to specific uses. Details methods for preserving maps.

Topographic Maps: Tools for Planning (16p.)*
Describes topographic maps as inventories of the physical features of the Earth's surface. Discusses the use of such maps in a variety of planning applications.

Geologic Maps: Portraits of the Earth (20p.)*
Explains the nature of geologic maps, how they are compiled, and the ways they may be used to determine relationships of rocks on and beneath the Earth's surface. Examples of maps are shown.

Land Use and Land Cover and Associated Maps (10p.)*
Describes land use and land cover maps as aids to land-use planners, land managers, and resource management planners. Relates associated maps to land use/land cover maps and to other available data.

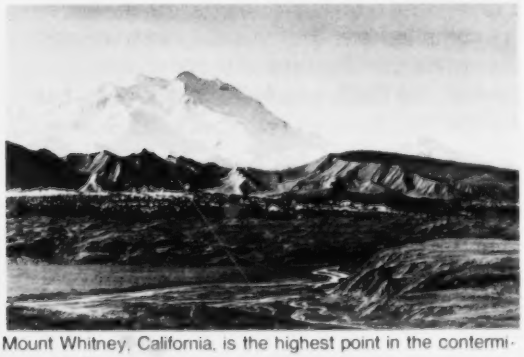
State Hydrologic Unit Maps (8p.)
Describes a series of uniform, nationally consistent maps that provide a standard geographical framework for more detailed water and related land resource planning.

A Selected Bibliography on Maps and Mapping (8p.)*
Lists books, authors, and publishing organizations that treat the subject of maps and mapping.

The Types of Maps Published by Government Agencies (16p.)*
Lists information on maps available from various Government agencies. Includes information on map types, publishing agencies, and addresses of organizations that distribute maps.

Map, Line, and Sinker (8p.)*
Explains how sports fishermen may plot the best fishing sites by locating old landmarks that have been covered by water. Gives instructions for obtaining Geological Survey maps to plot these locations.

Elevations and Distances in the United States (24p.)*
Lists geographic statistics on the 50 States including information on elevations, distances between geographic localities, geographic centers, and lengths of United States boundaries.



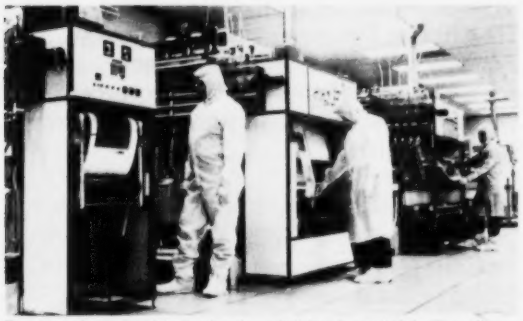
Mount Whitney, California, is the highest point in the conterminous 48 States.

Research in Space

Studying the Earth From Space (28p.)*
Explains the fundamentals of remote sensing and how satellite- and aircraft-obtained data are analyzed and applied to a variety of environmental, natural resource, and related earth-science studies.

Steps to the Moon (40p.)*
Summarizes man's progress in understanding the nature of the Moon. Describes physical features of the lunar surface as revealed by telescopic viewing and spacecraft instrumentation.

EROS: A Space Program for Earth Resources (8p.)*
Describes the application of space-age technology to earth science, environmental, and natural resource studies. Indicates activities of the Earth Resources Observation Systems (EROS) Program.



Personnel are clad in protective clothing to maintain the ultra-clean environment in a production photo laboratory.

Special Topics

Building Stones of Our Nation's Capital (48p.)*
Describes the source and appearance of stones used in buildings, monuments, and other structures of the Capital. Provides a "walking tour guide" through Washington, D.C.

Nature: An Environmental Yardstick (20p.)*
Discusses the role the earth sciences play in solving environmental problems. Emphasizes the importance of research in collecting information about natural resources and the environment.

Plain Geology (16p.)*
Discusses the need to express scientific concepts in simple and direct language. Urges scientists to use plain words in their discussions and reports so that they may be understood by the nonscientific public.

Tree Rings: Timekeepers of the Past (16p.)*
Explains how past environmental and ecological conditions have been recorded in tree rings. Discusses how scientists interpret this information.

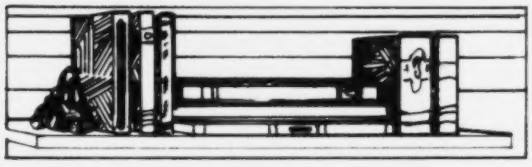
Think Metric (10p.)*
Describes a simple approach to understanding and using the metric system of measurement. Provides readily understood comparisons between the metric and U.S. inch/pound units of measurement.

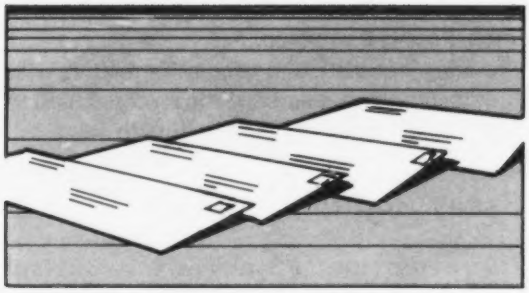
Conversion Factors: SI Metric and U.S. Inch/Pound Units (12p.)*
Provides information to familiarize readers with metric units of measurement that correspond to U.S. inch/pound units most frequently used.

Essay Reprints

From time to time, the Survey reprints articles of general interest that have appeared in other publications. Individual copies of these reprints may be obtained from, and on request to, the Distribution Centers at Arlington, Va., and Denver, Colo. Reprints presently available are as follows:

1. Earth Sciences and the Urban Environment
2. Estimates of Undiscovered Petroleum Resources: A Perspective
3. The Future of Earthquake Prediction
4. Ground Water: An Undervalued Resource
5. How Much Water in a 12-ounce Can? A Perspective on Water-Use Information
6. Monitoring Active Volcanoes
7. The Naming (and Misnaming) of America
8. Outer Continental Shelf Safety in Oil and Gas Operations
9. Planetary Exploration and Understanding the Earth
10. Plate Tectonics and Man
11. Replenishing Non-Renewable Mineral Resources
12. The Role of Earth Sciences in the Disposal of Radioactive Waste
13. Submarine Landslides
14. When Soils Start to Flow





Principal Addresses of the U.S. Geological Survey

Main centers:

National Headquarters
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101 National Center
Reston, VA 22092
Telephone: (703) 860-7000

Eastern Region Headquarters
U.S. Geological Survey
109 National Center
Reston, VA 22092
Telephone: (703) 860-7414

Central Region Headquarters
U.S. Geological Survey
Box 25046, Federal Center
Denver, CO 80225
Telephone: (303) 234-3736

Western Region Headquarters
U.S. Geological Survey
345 Middlefield Road
Menlo Park, CA 94025
Telephone: (415) 323-8111

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Arlington, Virginia
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1200 South Eads Street
Arlington, VA 22202
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Fairbanks, Alaska
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Fairbanks, AK 99701
Telephone: (907) 456-7535

Public Inquiries Offices:

Anchorage, Alaska
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108 Skyline Building
508 Second Avenue
Anchorage, AK 99501
Telephone: (907) 277-0577

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U.S. Geological Survey
7638 Federal Building
300 North Los Angeles Street
Los Angeles, CA 90012
Telephone: (213) 688-2850

Menlo Park, California
U.S. Geological Survey
Room 122, Bldg. No. 3 (MS33)
345 Middlefield Road
Menlo Park, CA 94025
Telephone: (415) 323-8111, ext. 2817

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504 Customhouse
555 Battery Street
San Francisco, CA 94111
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169 Federal Building
1961 Stout Street
Denver, CO 80294
Telephone: (303) 837-4169

District of Columbia
U.S. Geological Survey
1028 General Services Building
19th and F Streets NW.
Washington, DC 20244
Telephone: (202) 343-8073

Dallas, Texas
U.S. Geological Survey
1C45 Federal Building
1100 Commerce Street
Dallas, TX 75242
Telephone: (214) 767-0198

Salt Lake City, Utah
U.S. Geological Survey
8105 Federal Building
125 South State Street
Salt Lake City, UT 84138
Telephone: (801) 524-5652

Reston, Virginia
U.S. Geological Survey
302 National Center, Rm. 1C402
Reston, VA 22092
Telephone: (703) 860-6167

Spokane, Washington
U.S. Geological Survey
678 U.S. Courthouse
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Spokane, WA 99201
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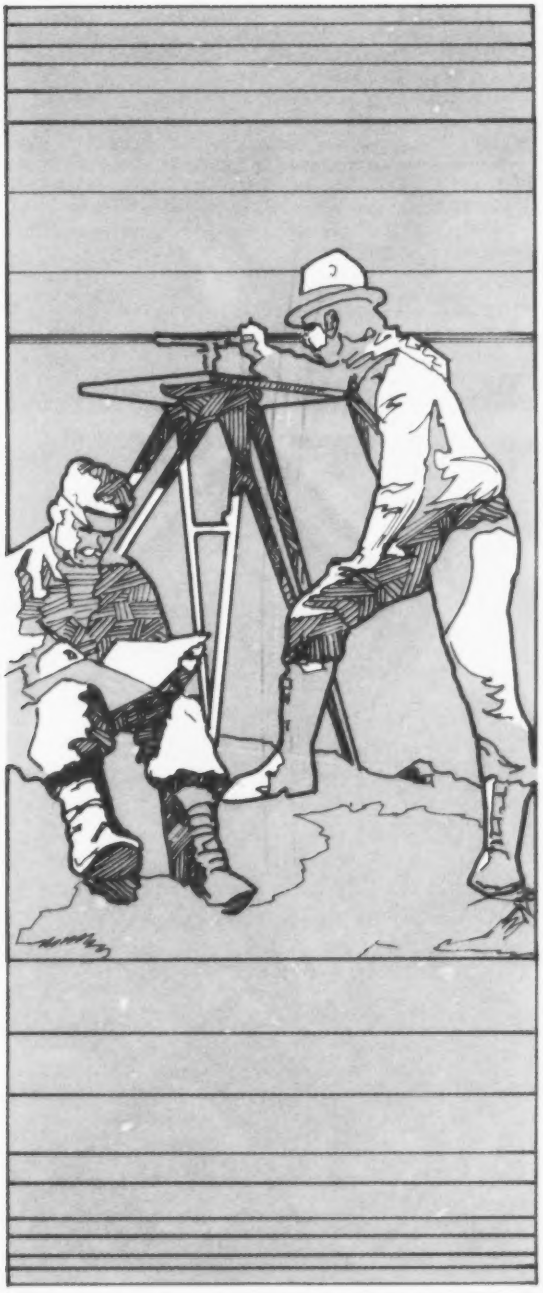

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As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.